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Award Number DAMD17-99-1-9050

TITLE: Determining Prostate Cancer and Lifestyle Practices Among African American SDA and Non-SDA Men

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REPORT DATE: August 1999

TYPE OF REPORT: Final

PREPARED FOR: U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland 21702-5012

DISTRIBUTION STATEMENT: Approved for Public Release;
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REPORT DOCUMENTATION PAGE

*Form Approved
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Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY <i>(Leave blank)</i>			2. REPORT DATE August 1999		3. REPORT TYPE AND DATES COVERED Final (15 Feb 99 - 14 Aug 99)	
4. TITLE AND SUBTITLE Determining Prostate Cancer and Lifestyle Practices Among African American SDA and Non-SDA Men			5. FUNDING NUMBERS DAMD17-99-1-9050			
6. AUTHOR(S) Ephraim Gwebu, Ph.D.						
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Oakwood College Huntsville, Alabama			8. PERFORMING ORGANIZATION REPORT NUMBER			
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army Medical Research and Materiel Command Fort Detrick, Maryland 21702-5012			10. SPONSORING / MONITORING AGENCY REPORT NUMBER			
11. SUPPLEMENTARY NOTES						
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for Public Release; Distribution Unlimited				12b. DISTRIBUTION CODE		
13. ABSTRACT <i>(Maximum 200 words)</i> <p>African-American (A-A) men have the highest rates of prostate cancer in the world. The incidence of prostate cancer for A-A men is 37% higher than Whites and the death rate for A-A men is three times higher than that of the general population. The purpose of the project was to determine whether lifestyle or ethnicity or the combination of both is a reason for excess mortality from prostate cancer for African-Americans? The project was divided into 2 phases. Phase I involved (1) training a cadre of A-A for epidemiological studies and (2) developing survey instruments for assessment of lifestyle and screening, and risk for prostate cancer among A-A men. Both activities have been done successfully. <i>This was the approved statement of work.</i> Phase II (<i>not part of approved statement of work</i>), is to perform the survey using the new survey instruments, starting with a pilot project of a stratified, randomly selected target A-A population. We strongly believe that the results from the Phase II study will allow us to identify African-Americans who are at risk for prostate cancer and also provide intervention strategies for reducing the risk.</p>						
14. SUBJECT TERMS Prostate Cancer African-American, Lifestyle Practices, Seventh-day Adventist, Survey Instrument					15. NUMBER OF PAGES 35	
17. SECURITY CLASSIFICATION OF REPORT Unclassified					16. PRICE CODE	
18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified		19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified			20. LIMITATION OF ABSTRACT Unlimited	

FOREWORD

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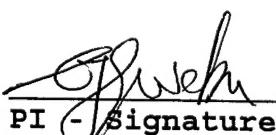
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PROSTATE CANCER AND LIFESTYLE PRACTICES AMONG AFRICAN-AMERICAN SDA AND NON-SDA MEN

PHASE I: **Research Training and Survey Instrument Development** **(Only this Phase was performed under this award)**

(5) INTRODUCTION

Under the terms of this grant, the faculty, staff and students of Oakwood College received intensive training on survey data acquisition and analysis, and survey instrument development. Prominent authorities in biostatistics, epidemiology, health promotion, and urology/oncology provided this training. The Oakwood College research team actively participated in the development of prostate cancer survey instruments in collaboration with the principal investigator and the previously mentioned specialists. These activities have resulted in the establishment of (1) a cadre of trained African-American faculty, staff and students, and (2) valid and reliable survey instruments to address issues of excess morbidity and mortality from prostate cancer in the African-American community.

(6) BODY

A. Training

1. Trainees: Ephraim T. Gwebu, Ph.D., Professor and Director of Research
 Carol Allen, Ph.D., Professor and Chair, Department of Nursing
 LaTanja Banks, B.Sc. Research Administrative Assistant
 Rashida Williams, pre-medical senior
 Enamme Parris, pre-medical senior
 Virginia Douglas, nursing sophomore
 David Ruff, pre-biomedical sciences sophomore
 Brenya Griffin, pursuing Ph.D. at Meharry Medical College as of August 16 1999

2. Trainers: Min Qi Wang, Ph.D. Biostatistician and Evaluation Specialist
 Frederick Murphy, MPH, Epidemiologist and Health Promoter
 Leon Seard, MD, Urologist/Oncologist

3. Training Content

- Survey Instrument Development Process
- Data Acquisition Process
- Data Management Process: coding, scoring, and data base software training
- Prevalence estimate
- Basic Statistical Analysis
- Statistical software

B. Instrument Development:

Highlight of Steps:

(i) The research team conducted an extensive national and international search of literature related to the prostate cancer screening/life style/practice survey instrument. The search referenced sources utilizing the Internet, Medline, Healthgate, CDC Chronic Diseases Information Library and Inter-library Loan/Information Sharing System. The literature search appeared to indicate that a useful instrument should measure the following areas: family history of prostate cancer, screening practices, prostate prevalence, prostate cancer related symptoms, physical activity, substance use (tobacco and alcohol), dietary practice, obesity, mental health, health status and socio-demographic risk factors. Consequently, we identified a series of survey items to include these areas. Our goal was to construct an instrument that is both useful and practical.

(ii) **Survey Instrument Validation.**

A panel of experts around the country was then identified from the following disciplines:

- Medical Oncology/Urology
- Nursing
- President, American Public Health Association
- Health Promotion Specialist
- Cancer Prevention Specialist
- Biostatistician
- Evaluation Specialist

(iii) **Validation.**

Forms were developed and sent to each panel of experts. Each panel reviewed and assigned a score from 1 to 5 (least useful to most useful) to each question. Additionally, each panel was also requested to review and make suggestions on the items independently and collectively as a whole instrument. Dr. Wang, the Biostatistician/Evaluation Specialist, analyzed and summarized the comments, which were discussed further by the entire research team. A 23-item instrument was finalized which combined Lifestyle Practices and Screening Practices into a single questionnaire. The instrument takes approximately 10 minutes to respond to, making the data collection process more practical.

(iv) **Description of each question on Lifestyle and Screening Practices Survey Instrument**

Question

1. Are there males in family who have had prostate cancer?
2. Have you ever been tested for prostate cancer?
3. Which of these tests have you had?
4. Were any of these tests abnormal?
5. Have you experienced any urinary problems in past year?
6. Have you experienced any pains in groin, testicles, rectum in past year?
7. What type of physical activity or exercise did you spend the most time doing during the past few weeks?
8. How many times on average per week did you take part in this activity?
9. Considering all types of alcoholic beverages, how many times in the past month did you have 5 or more drinks?

Information Elicited

- | |
|-----------------------------|
| Family history/genetic |
| Screening Practices |
| Screening Practices |
| Prevalence |
| Symptoms |
| Symptoms |
| Physical Activity |
| Physical Activity Intensity |
| Substance Use/Abuse |

10. Have you smoked at least 100 cigarettes in your lifetime?	Substance Use/Abuse
11. Do you now smoke cigarettes, some days, or not at all?	Substance Use/Abuse
12. Are you a vegetarian?	Dietary Practices
13. How long have you been a vegetarian?	Dietary Practices
14. How often do you eat vegetarian meat substitutes?	Dietary Practices
15. What is your height and weight?	BMI/Risk Factor
16. What is your age?	Demographic/Risk Factor
17. What is your race?	Demographic/Risk Factor
18. What is your marital status?	Potential Risk Factor
19. What is highest grade or year of school you completed?	SES Risk Factor
20. What is your employment status?	SES Risk Factor
21. Is your annual income from all sources?	SES Risk Factor
22. During the past week, for about how many days have you felt sad, blue, or depressed?	Mental health
23. What are the major impairment or health problems that limit your activities (check all that apply)	Disease Status/Disability

Abbreviations: BMI = Body-Mass Index; SES = Socioeconomic Status

(v) Medical/Health Provider Prostate Cancer Survey Instrument

This instrument was produced with very little modification of the standard questionnaire for assessing health provider practices.

PHASE II: Prostate Cancer and Lifestyle Practices among African-American SDA and Non-SDA Men

Background for Proposed Phase II:

Prostate cancer is the leading cancer diagnosed among men in the United States. African-American (A-A) men in the U.S. have the highest rates of this cancer in the world. The incidence of prostate cancer for A-A men is 37% higher than the Whites and the death rate for A-A men is three times higher than that of the general population. For every 100,000 A-A men, an estimated 234 will be diagnosed with prostate cancer this year, compared with 135 of every 100,000 from the general population. Unfortunately, the etiology of prostate cancer is unknown and no safe and effective treatment has been developed. It appears that little can be done to avoid prostate cancer. Notwithstanding, epidemiological research may be a more important and more feasible approach to identifying (a) determinants of the disease and (b) preventive strategies.

Since the mid-19th century, the Seventh-day Adventist Church (SDA) has advocated temperate lifestyle practices for its members (2). For spiritual, physical, and mental growth and development, it warns constituent members against the use of tobacco, alcohol, illicit substances, products from scavenger animals, and risky sexual behavior. Additionally, lacto-ovo-vegetarian diets, although not required, are strongly encouraged and consumption of caffeinated substances, including certain hot condiments, is strongly discouraged (3-5).

The Church does recommend the liberal use of pure water (internally and externally); the consumption of a wide variety of fruits, vegetables, whole grains, nuts and low-fat dairy products; daily exercise; and exposure to fresh air and sunshine (1,6). Consequently, individuals who join the

church develop a heightened awareness of the importance of maintaining health to achieve a better quality of life. In addition to behavior changes, this heightened awareness results in tremendous benefits in terms of decreased mortality from most chronic diseases and contributes to a longer life expectancy for Seventh-day Adventists. Many studies report significant lower incidence of prostate cancer among white SDA's (7-11). These findings suggest that there is a causal relationship that implies that the SDA lifestyle plays an important role in reducing cancer incidence.

African-American Seventh-day Adventists

Unlike non-African-American Seventh-day Adventists, very little systematic research has ever been done on African-American SDA's (A-A-SDAs). African-American Seventh-day Adventists form a group whose ethnicity suggests increased risk for premature illness and excess death, but whose lifestyle values and practices would tend to reduce the risk substantially.

All African-American Seventh-day Adventists belong to Churches that, together, constitute Regional Conferences. Each conference has a president with oversight over pastors of churches in the conference. There are over 252,000 African-American members as shown in Table 1. Oakwood College has direct access to each Church in each regional conference. We have access to (names, addresses and phone numbers) over 90% of the membership. African-American men will be selected from neighboring non-SDA churches in these areas, for comparison with A-A SDAs.

Table 1.
Regional Church Conferences of African-American Seventh-day Adventists (A-A SDAs)

Members	A-ASDA Conference	States Covered
42,517	Northeastern USA	RI, VT, CT, ME, MA, NH, NY
25,800	Allegheny East	DE, NJ, PA, VA, WV, MD, DC
11,468	Allegheny West	OH, WV, MD, VA, PA
22,117	Lake Region	IL, IN, MI, MN, WI
9,478	Central States	CO, IA, KS, MN, MO, NE, ND, SD, WY, NM
25,122	South Atlantic	NC, SC, GA
27,417	South Central	AL, FL, KY, MS, TN
21,419	Southeastern	FL, GA
17,860	Southwest	AR, LA, NM, OK, TX
49,114	California	CA
252,312		

Aims for Proposed Phase II:

- (1) To determine the prevalence rates of prostate cancer among A-A SDAs in the USA
- (2) To determine the differences of lifestyle and risks for prostate cancer between A-A SDAs and A-A Non-SDAs using the survey instruments developed in Phase I.

(3) To determine the direction and scope of relationships of lifestyle and prostate cancer prevalence among A-A SDAs and A-A Non-SDAs.

Repeat (2) and (3) above, by comparing A-A SDAs and a white population.

Hypotheses for Phase II:

Under this most important investigation, researchers will attempt to test two very important hypotheses, which include the following:

1. African-American Seventh-day Adventist males who practice lower risk lifestyles would have significant lower prostate cancer risks than their Non- SDA counterparts.
2. African-American Seventh-day Adventist males have lower incidence and prevalence rates of Prostate Cancer than do their Non-SDA counterparts.

Our belief is that the results from this survey instrument will allow us to identify African-Americans who are at risk for prostate cancer and also provide intervention strategies. The results will help us answer a crucial question: whether lifestyle or ethnicity or the combination of both is a reason for excess mortality from prostate cancer for African-Americans? Identifying a causal relationship between lifestyle and prostate cancer would be very encouraging to the African-American community. We feel it would be unfortunate if these hypotheses are not explored because a great opportunity to answer an important question for the African-American community will be lost.

Study Design of Proposed Phase II

Preliminary Studies on African-American Seventh-day Adventists

1. Health Behavior Based Studies: Our preliminary studies show that A-A Seventh-day Adventist adults experience remarkable reductions in the levels of chronic-disease risk factors with healthy lifestyle practices (12).
2. Cancer Mortality Rate. A pilot study by Murphy et al.(our collaborator) provides compelling evidence suggesting that the cancer death rate is lower among African-American Seventh-day Adventist than the general population (13).

We had planned to collect data using the Survey Instruments developed in Phase I. However, we were constrained at the request of Dr. Monica Liebert, in a memo dated October 13, 1998 which was a response of assurance that no Human Subjects would be used in the approved statement of work. The report to the U.S. Army Medical Research and Materiel Command (USAMRMC) includes (1) a list of trained personnel (2) copies of completed survey instruments. These survey instruments are ready for pre-testing on target groups in Phase II of the study, which is not included, and was not done under the terms of this award. A new proposal will be submitted for Phase II.

(7) KEY RESEARCH ACCOMPLISHMENTS

- We established a core group of African-American faculty, staff and students trained in (1) Survey Instrument development process, (2) Data acquisition process, (3) Data Analysis process and (4) Survey Instrument Validation.
- We have developed and validated a Lifestyle and Screening Practices Survey Instrument for Prostate Cancer through substantial efforts involving a multidisciplinary team of experts which included:

Medical Oncology/Urology
 Nursing
 President, American Public Health Association
 Health Promotion Specialist
 Cancer Prevention Specialist
 Biostatistician

- We believe strongly that the Survey Instrument will identify African-Americans who are at risk for Prostate Cancer and provide intervention content. Ultimately, it will help reduce the prostate cancer prevalence in this population of Americans.
- We are ready to implement Phase II of the study with additional funding from US Army Medical Research and Materiel Command.
- A Medical/Health Provider Survey Instrument has been developed for immediate use.

(8) REPORTABLE OUTCOMES:

- A. The following Survey Instruments have been developed and are enclosed:
 - 1. *Lifestyle and Screening Practices Survey Instrument for Prostate Cancer*
 - 2. *Medical/Health Provider Survey Instrument for Prostate Cancer*
- B. We are ready to implement Phase II of the study. We have the target population, logistical support and personnel. Phase II can be done in 6 months or less if funding is adequate.

(9) CONCLUSIONS:

Based on the approved statement of work, personnel have been trained, and survey instruments developed. We are ready to go on to Phase II. Phase II, will start with a pilot project of a stratified, randomly selected target population. We strongly believe that the results from the Phase II study will allow us to identify African-Americans who are at risk for prostate cancer and also provide intervention strategies for reducing the risk. The results will help us answer a crucial question: whether lifestyle or ethnicity or the combination of both is a reason for excess mortality from prostate cancer for African-Americans? Identifying a causal relationship between lifestyle and prostate cancer would be very encouraging to the African-American community, as it will show that they can do something about reducing the risk. We feel it would be unfortunate if these hypotheses are not explored because a great opportunity to answer an important question for the African-American community will be lost.

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(11) APPENDICES:

Appendix I. Survey Instrument Questionnaire of Lifestyle Practices and Screening Practices for Prostate Cancer

Appendix II. Health/Medical Provider Practices Survey Instrument Questionnaire

Appendix III: Copies of two published papers by some members of the research team on African American Seventh-day Adventists.

(12) BINDING: The report is stapled.

(13) FINAL REPORTS

Personnel

Ephraim Gwebu, Principal Investigator

LaTanja Banks, Project Administrator

Fred Murphy, Consultant

MinQi Wang, Consultant

Leon Seard, Consultant

Six Student Assistants

APPENDIX I

Survey Instrument Questionnaire of Lifestyle Practices and Screening Practices for Prostate Cancer

Prostate Cancer Lifestyle and Screening Practices Survey

**All responses will be kept confidential. Names will not be used on this survey.
Please circle or write your response.**

1. Are there any males in your family who have had prostate cancer?

- | | |
|----------------|---|
| a. Grandfather | 1 |
| b. Father | 2 |
| c. Brother | 3 |
| d. Son | 4 |
| e. Me | 5 |
| f. None | 6 |
| g. Don't know | 7 |

2. Have you ever been tested for prostate cancer?

- | | |
|---------------------------------------|---|
| a. Yes | 1 |
| b. No (if no, skip questions 3 and 4) | 2 |
| c. Don't know | 3 |

3. Which of these test have you had?

- | | |
|----------------|---|
| a. DRE | 1 |
| b. PSA | 2 |
| c. DRE and PSA | 3 |
| d. Other | 4 |

4. Were any of the tests abnormal (check all that apply)?

- | | |
|----------------------------------|---|
| a. DRE | 1 |
| b. PSA ($> 4.0 \text{ ng/ml}$) | 2 |
| c. DRE and PSA | 3 |
| d. Other | 4 |

5. Have you experienced any urinary problems during the past year?

- | | |
|--------|---|
| a. Yes | 1 |
| b. No | 2 |

6. Have you experienced any pain in groin, testicles, and rectum during the past year?

- | | |
|--------|---|
| a. Yes | 1 |
| b. No | 2 |

7. What type of physical activity or exercise did you spend the most time doing during the past a few weeks?

- a. Activity (specify): _____

8. How many times on average per week did you take part in this activity?

- | | |
|--------------------|---|
| a. 0 times | 1 |
| b. 1-2 times | 2 |
| c. 3 or more times | 3 |

9. Considering all types of alcoholic beverages, how many times during the past month did you have 5 or more drinks on an occasion?

- a. Number of times _____

10. Have you smoked at least 100 cigarettes in your entire life?

- | | |
|--------|---|
| a. Yes | 1 |
| b. No | 2 |

11. Do you now smoke cigarettes everyday, some days, or not at all?

- | | |
|---------------|---|
| a. Everyday | 1 |
| b. Some days | 2 |
| c. Not at all | 3 |

12. Are you a vegetarian?

- | | |
|---------------------------------|---|
| a. Yes | 1 |
| b. No (if no, skip question 13) | 2 |

13. How long have you been a vegetarian?

- | | |
|----------------------|---|
| a. Less than 1 year | 1 |
| b. 1-3 years | 2 |
| c. More than 3 years | 3 |

14. How often do you eat vegetarian meat substitutes?

Example: Vegelinks, Grillers, Vegeburgers, etc.)

- | | |
|---------------------------|---|
| a. Never | 1 |
| b. Once a month | 2 |
| c. 1 to 3 times a week | 3 |
| d. 4 or more times a week | 4 |

15. What is your height and weight?

- a. Height _____
b. Weight _____

16. What is your age? _____

17. What is your race?
- | | |
|-----------------------------------|---|
| a. White | 1 |
| b. Black | 2 |
| c. Asian, Pacific Island | 3 |
| d. American Indian, Alaska Native | 4 |
| e. Spanish or Hispanic origin | 5 |
| f. Other: (Specify) | 6 |
| g. Don't know/Not sure | 7 |
18. Are you currently:
- | | |
|----------------|---|
| a. Married | 1 |
| b. Not married | 2 |
19. What is the highest grade or year of school you completed?
- | | |
|---|---|
| a. Grades 11 or below | 1 |
| b. Grade 12 or GED (High school graduate) | 2 |
| c. College 1 year to 3 years (Some college or technical school) | 3 |
| d. College 4 years or more (College graduate) | 4 |
20. Are you currently:
- | | |
|----------------------------|---|
| a. Employed for wages | 1 |
| b. Unemployed or Homemaker | 2 |
| c. Student | 3 |
| d. Retired | 4 |
| e. Unable to work | 5 |
21. Is your annual household income from all sources?
- | | |
|------------------------|---|
| a. < \$10,000 | 1 |
| b. \$10,001 - \$35,000 | 2 |
| c. > \$35,000 | 3 |
22. During the past week, for about how many days you felt sad, blue, or depressed?
- a. Number of days _____
23. What are the major impairment or health problems that limit your activities (check all that apply)?
- | | |
|--|---|
| a. Arthritis/rheumatism | 1 |
| b. Walking problems/fractures, bone/joint injury | 2 |
| c. Hearing/eye/vision problem | 3 |
| d. Heart/lung/stroke/high blood pressure | 4 |
| e. Diabetes | 5 |
| f. Cancer | 6 |
| g. Other impairment/problem | 7 |
| h. None/Don't know/Not sure | 8 |

APPENDIX II
Health/Medical Provider Practices Survey Instrument Questionnaire

PROSTATE CANCER HEALTH PROVIDER SURVEY

1. In your own practice, is early detection of prostate cancer in asymptomatic patients being given greater or less emphasis than three years ago? Please check only one box.

Greater
 Less
 Same
 I don't screen asymptomatic patients for prostate cancer

2. Compared with three years ago, how inclined are you to use the following for prostate cancer screening of asymptomatic patients? Please check only one box for each test.

PSA = Prostate-specific antigen

	More Inclined	Less Inclined	No Change	I Don't Use for Screening
a) DRE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) PSA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. About how many of these tests do you recommend for prostate cancer screening in asymptomatic patients \leq 40 years old in a typical week? Please check only one box.

	None	1-5	6-10	11-15	16-20	>20
a) DRE	<input type="checkbox"/>					
b) PSA	<input type="checkbox"/>					

4. Please indicate the youngest patient age at which you routinely recommend using these tests for prostate cancer screening in asymptomatic patients. Please check only one box in each test.

	40	50	60	I Don't Use For screening
a) DRE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) PSA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. If you are examining a patient 40 to 49 years old who has no personal history of prostate cancer and who is asymptomatic, how frequently do you recommend the following tests or combination of tests? Please check only one box for each lettered item.

	Never	<25%	25-49%	50-75%	>75%	Always
--	-------	------	--------	--------	------	--------

- a) DRE and PSA
b) DRE alone
c) PSA alone

6. If you are examining a patient 50 to 75 years old who has no personal history of prostate cancer and who is asymptomatic, how frequently do you recommend the following tests or combination of test? Please check only one box for each lettered item.

	Never	<25%	25-49%	50-75%	>75%	Always
--	-------	------	--------	--------	------	--------

- a) DRE and PSA
b) DRE alone
c) PSA alone

7. If an asymptomatic patient 50 to 75 years old has a negative digital rectal exam would you generally advise having a PSA test?

- Yes
 No

8. If an symptomatic patient 50 to 75 years old has a positive digital rectal exam or a positive PSA test, would you generally advise having a transrectal ultrasound (TRUS) exam?

- Yes
 No

9. Do you know the usual charge to your patient for these tests? If yes, please fill in the amount.

	Yes	Dollar Amount	Not Sure
a) PSA	<input type="checkbox"/>	_____	<input type="checkbox"/>
b) TRUS	<input type="checkbox"/>	_____	<input type="checkbox"/>

10. Where does prostate cancer rank among the ten leading causes of cancer deaths in men in the United States? Please check only one box.

<input type="checkbox"/> 1st	<input type="checkbox"/> 5th	<input type="checkbox"/> 9th
<input type="checkbox"/> 2nd	<input type="checkbox"/> 6th	<input type="checkbox"/> 10th
<input type="checkbox"/> 3rd	<input type="checkbox"/> 7th	<input type="checkbox"/> Not Sure
<input type="checkbox"/> 4th	<input type="checkbox"/> 8th	

11. Excluding skin cancers, where does prostate cancer rank among the ten most frequently diagnosed sites of cancer in men in the United States? Please check only one box.

<input type="checkbox"/> 1st	<input type="checkbox"/> 5th	<input type="checkbox"/> 9th
<input type="checkbox"/> 2nd	<input type="checkbox"/> 6th	<input type="checkbox"/> 10th
<input type="checkbox"/> 3rd	<input type="checkbox"/> 7th	<input type="checkbox"/> Not Sure
<input type="checkbox"/> 4th	<input type="checkbox"/> 8th	

Please complete the following background information:

12. What year did you graduate from medical or osteopathic school?

19 _____

13. What is your age group?

<input type="checkbox"/> Under 30	<input type="checkbox"/> 50 - 59
<input type="checkbox"/> 30 - 39	<input type="checkbox"/> 60 or over
<input type="checkbox"/> 40 - 49	

14. What is your gender?

<input type="checkbox"/> Male	<input type="checkbox"/> Female
-------------------------------	---------------------------------

15. If board certified, please check your current certifications (s).

<input type="checkbox"/> American College of General Practice in Osteopathic Medicine and Surgery
<input type="checkbox"/> Family Practice
<input type="checkbox"/> Internal Medicine

16. Is your practice primarily a (check the one that best applies):

- Private office with 1 or 2 physicians
- Private group practice with 3 or more physicians
- Pre-paid group practice or Health Maintenance Organization
- University hospital/clinic
- Government clinic (local, state, or federal)
- Hospital outreach clinic
- Other (specify): _____

17. Do you have teaching responsibilities at a medical school or residency training program?

- Yes
- No

18. About what percent of your professional time is spent in direct patient care? Please check only one box.

- None 40% 80%
- 10% 50% 90%
- 20% 60% 100%
- 30% 70%

19. About how many male patients \geq 40 years old do you see in an average week? Please check only one box.

- None 20 - 29 \geq 50
- 1-9 30-39
- 10 - 19 40 - 49

Female Physicians:

Please go to Question

20. Have you personally ever had, when asymptomatic, any of the following tests performed as prostate cancer screening tests? Please check only one box

for each lettered item.

		Yes	No	Not Sure
a)	DRE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b)	PSA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

21. Do you have a prostate condition?

- Yes, please go to Question 24.
- No, please continue with Question 22.

22. Do you intend to have any of these examinations done periodically on yourself for routine prostate cancer screening? Please check only one box for each lettered item.

		Yes	No	Not Sure
a)	DRE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b)	PSA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

23. If you intend to have any of these examinations done periodically on yourself for routine prostate cancer screening, how often do you plan to have them performed? Please check only one box for each lettered item.

		Every Year	Interval greater than 1 year	Don't Intend to have
a)	DRE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b)	PSA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

24. Please indicate the degree to which the following factors may increase the risk of developing prostate cancer. Please check only one box for each lettered item.

		Large increase	Moderate increase	Little or no increase	Not Sure
a)	Occupational exposures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b)	High fat diet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- c) Genetics or family history of prostate cancer
- d) Increasing age
- e) Black race
- f) Vasectomy

25. Please indicate your level of agreement or disagreement with the following statements. Please check only one box.

- a) The mortality rate for prostate cancer is increasing.

Agree Strongly	Agree Somewhat	Neither Agree Nor Disagree	Disagree Somewhat	Disagree Strongly
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- b) The incidence rate for prostate cancer is increasing.

Agree Strongly	Agree Somewhat	Neither Agree Nor Disagree	Disagree Somewhat	Disagree Strongly
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- c) Use of DRE in prostate cancer screening has been shown to decrease the mortality rate.

Agree Strongly	Agree Somewhat	Neither Agree Nor Disagree	Disagree Somewhat	Disagree Strongly
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- d) Use of the PSA test in prostate cancer screening has been shown to decrease the mortality rate.

Agree Strongly	Agree Somewhat	Neither Agree Nor Disagree	Disagree Somewhat	Disagree Strongly
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- e) Studies have proven the superior safety and effectiveness of surgical or radiation treatment compared with watchful waiting (with delayed hormonal therapy if metastatic disease develops) in all grades of localized (clinical stage A or B) prostate cancer.

Agree Strongly	Agree Somewhat	Neither Agree Nor Disagree	Disagree Somewhat	Disagree Strongly
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26. Please indicate your level of agreement or disagreement with the following guidelines for prostate cancer screening of asymptomatic patients. Please check only one box for each lettered item.

a) Annual DRE beginning at age 40 and annual PSA beginning at age 50.

Agree Strongly	Agree Somewhat	Neither Agree Nor Disagree	Disagree Somewhat	Disagree Strongly
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b) Annual DRE alone beginning at age 40.

Agree Strongly	Agree Somewhat	Neither Agree Nor Disagree	Disagree Somewhat	Disagree Strongly
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c) Prostate cancer screening not indicated for asymptomatic patients.

Agree Strongly	Agree Somewhat	Neither Agree Nor Disagree	Disagree Somewhat	Disagree Strongly
-------------------	-------------------	-------------------------------	----------------------	----------------------

27. To what religious do you belong?

a) Baptist 01

b) Methodist 02

c) Luthern 03

d) Catholic 04

e) SDA 05

f) Other (Specify) 06

28. About how many Seventh-day Adventist patients did you see in the past year?

- a) None.....01
- b) 1-5.....02
- c) 6-10.....03
- d) 11-15.....04
- e) 16-20.....05
- f) Over 20.....06

29. In which city and state do you practice? Please indicate below:

- a) City_____
- b) State_____

Thank you very much for completing the questionnaire. We sincerely appreciate your time and efforts. Please return the questionnaire in the enclosed self-addressed postage -paid envelope. If you would like a copy of the survey results, please print your name and address below or to retain anonymity, send your name and address under separate cover.

Yes, I would like to receive the survey results.

Name: _____

Address: _____

APPENDIX III

**Copies of two published papers by some members of the research team
on African American Seventh-day Adventists**

Health Briefs

The Mortality Profile of Black Seventh-Day Adventists Residing in Metropolitan Atlanta: A Pilot Study

FREDERICK G. MURPHY, MSPH, MPIA, DANIEL S. BLUMENTHAL, MD, MPH,
JOANN DICKSON-SMITH, MSPH, AND RALPH P. PEAY, MPH

Abstract: Mortality information was gathered for 110 Black Seventh-day Adventist members of seven churches in Metropolitan Atlanta, Georgia during the period 1980-87. Seventy-seven percent of the deaths were due to cardiovascular diseases; 8 percent due to cancer, the second leading cause of death. The cancer rate is extremely low in comparison to the proportion of deaths due to cardiovascular diseases. Subsequent research on this population will take into consideration lifestyle factors which could contribute to this finding. (*Am J Public Health* 1990; 80:984-985.)

Introduction

Differences in mortality rates and life expectancy between Black and White Americans are well known,¹⁻⁴ as are reduced disease specific mortality rates among certain religious groups whose lifestyles protect them from various risk factors.^{5,6} Black Seventh-day Adventists are a group whose race is at high risk for early death but whose lifestyle may reduce that risk substantially. Black Seventh-day Adventists residing in the Metropolitan Atlanta, Georgia area who are members of the South Atlantic Conference of Seventh-day Adventists have not been previously studied.

Seventh-day Adventist doctrine warns its members, for reasons of health and temperance, not to consume caffeine, tobacco, alcohol, illegal drugs, or pork products.⁷⁻⁹ Although vegetarianism is not required, it is highly recommended. The doctrine also warns against seeking entertainment in establishments where consumption of proscribed substances take place. It further indicates that health risks can result from such attendance.^{6,10} This brief investigation examines mortality among Black Seventh-day Adventists living in Metro-

From the Morehouse School of Medicine, Department of Community Health and Preventive Medicine, and the South Atlantic Conference of Seventh-Day Adventist in Atlanta, GA. Address reprint requests to Frederick G. Murphy, MSPH, Division of Diabetes Translation, Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control, 1600 Clifton Road, Mailstop E-08 Atlanta, GA 30333. Mr. Murphy was lead public health investigator for this pilot study and community organizer at Morehouse School of Medicine; Dr. Blumenthal, research consultant for the study, is chairman of the Department of Community Health and Preventive Medicine at Morehouse; Ms. Dickson-Smith, primary researcher for the study, is currently an intervention specialist at CDC; Mr. Peay, research consultant for the study, is currently President of the South Atlantic Conference of Seventh-Day Adventist. This paper, submitted to the Journal July 14, 1989, was revised and accepted for publication January 25, 1990.

politan Atlanta, Georgia during the seven-year period 1980-87.

Methods

The seven Black Seventh-day Adventist churches included in this study are established members of the South Atlantic Conference of Seventh-day Adventists also based in Atlanta, Georgia. Black Seventh-day Adventist membership in Atlanta grew from 3,366 in 1980 to 6,002 in 1987. Three of the seven churches were established after 1984.

All deaths among members of Adventist churches are reported to regional conferences on a quarterly basis by church clerks. This is part of a conference policy which requires each of its churches to report the names of all individuals dropped from church rolls due to death, apostasy, or lack of attendance. The death portion of these reports contain only the name of the deceased individual, the year of death, and the church with which he/she was affiliated.

We manually retrieved all quarterly reports submitted to the South Atlantic Conference Office between the years 1980 and 1987. Death information and data from each of these were then matched to death certificates at the Georgia Department of Vital Records. Data on the decedents' age at death, sex, and race were obtained from each available death certificate.

Results

Reports of 116 deaths were obtained from the South Atlantic Conference of Seventh-day Adventist. The year of death was not listed for six and could not be matched to death certificates in the State of Georgia Department of Vital Records. We were able to match the remaining 110.

Table 1 shows the distribution and average age at death by sex for the 110 matched death certificates. The female predominance is consistent with the approximately 2:1 (female:male) ratio in Black Seventh-day Adventist church membership in Atlanta.

Table 2 shows the number of deaths attributed to each

TABLE 1—Distribution of Deaths and Average Age at Death by Sex, Metropolitan Atlanta Seventh Day Adventists

Sex	Number of Deaths	Age at Death (years)		
		Average	Median	Range
Male	42	66.4	59	50-96
Female	68	77.4	71	55-104
Total	110	71.5	70	50-104

TABLE 2—Total Deaths by Specific Cause and Sex

Cause of Death	Male	Female	ICD Codes		
			A	B	Total
Cardiovascular Disease	29	56	4275	436	85
Lung Cancer	3	3	1629		6
Breast Cancer	—	2	1749		2
Prostate Cancer	1	—	185		1
Pneumonia	2	2	1629		4
Respiratory Failure	—	1	486		1
Homicide	4	—	9654	9554	4
Diabetes	—	1	2500		1
Renal Failure	1	1	1809	7100	2
Accidents	2	1	8120	8140	3
Asthma	—	1	4939		1
Total	42	68			110

Metro-Atlanta Minority SDA Mortality Profile

ICD Code A = Most frequently used code

ICD Code B = Second most frequently used code

specific cause of mortality. Cardiovascular disease accounted for 82.3 percent of the deaths in women and 69 percent in men. All four of the homicide deaths were among males.

Discussion

Although based on relatively small numbers of deaths, the results are suggestive. For example, cancer deaths were relatively rare in this pilot study. This could be attributed, at least in part, to abstinence from use of tobacco and alcohol, and a relatively low-fat diet (due to a high prevalence of vegetarianism) among Seventh-day Adventists.^{6,8,9,10} This high proportion of cardiovascular disease deaths among this group could be the result of the large number of elderly persons in the group.

Additional research focused on Black Seventh-day Adventists will be required in larger numbers so that more detailed information can be gathered. Phase II of this investigation is currently being proposed.

ACKNOWLEDGMENTS

The authors would like to acknowledge the staff of the South Atlantic Conference of Seventh-day Adventists and the Berean Seventh-day Adventists Church for their assistance and cooperation in the preliminary initiative. A special thanks to V. J. Mendinghall, Secretary of the South Atlantic Conference of Seventh-day Adventists for his patience and dedication to this pilot study; also, to Dr. Gene McGrady, at the Morehouse School of Medicine, for his review and comment on this manuscript.

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Disaster Medical Assistant Team Formed in Atlanta

An Adult Disaster Medical Assistance Team has been formed in Atlanta, Georgia, as part of the National Disaster Medical System, a joint effort of a number of federal agencies. The system will provide help in the event of a disaster large enough to overwhelm state and local resources.

This team of health volunteer personnel from the greater Atlanta area will function under the supervision of Clayton General Hospital—the hospital designated to help coordinate medical assistance units that travel to disaster sites. This is the second team formed in Atlanta this year. In March, the Henrietta Egleston Hospital for Children formed a Pediatric Disaster Medical Assistance Team.

More information is available from the Office of Emergency Preparedness, HRSA, 5600 Fishers Lane, Rm 14-48, Rockville, MD 20857. Tel: (301) 443-6580.

Health Values and Practices Among Seventh-Day Adventist

Frederick G. Murphy, MSPH, MPIA; Ephraim Gwebu, PhD; Ronald L. Braithwaite, PhD; Donna Green-Goodman, MPH; Larry Brown, MA

ABSTRACT: Differences in morbidity, mortality, and life expectancy between African-Americans and white Americans are well known, as are reduced disease-specific mortality rates among certain religious

groups whose lifestyle practices protect them from various risk factors. This manuscript specifically looks at the health values and practices among African-Americans Seventh-Day Adventist.

Since the mid-19th century, Seventh-Day Adventist (SDA) doctrine has promoted disease prevention by advocating temperate lifestyle practices for its members. For spiritual, physical, and mental growth and development, it warns constituents against the use of tobacco, alcohol, illicit substances, and products derived from scavenger animals (i.e., pork, shellfish, etc.).¹⁻³ Lacto-ovo-vegetarian diets, although not required, are strongly encouraged. Consumption of caffeinated substances, as well as use of certain hot condiments is strongly discouraged.⁴⁻⁶ The liberal use of pure water (internally and externally); the consumption of a wide variety of fruits, vegetables, whole grains, nuts, and low-fat dairy products; daily exercise; and exposure to fresh air and sunshine are all recommended practices by church leaders. The SDA

doctrine also warns against seeking entertainment in establishments where consumption of proscribed substances takes place and where violence is a high likelihood.^{1,7-8}

A population of over 3,000 African-American Seventh-Day Adventist (AASDA) was asked to participate in a convenience-sample-health-risk behavior survey conducted at the 1991 Annual Campmeeting at Oakwood College in Huntsville, Alabama. This annual meeting is sponsored by the South Central Conference (SCC) of Seventh-Day Adventist headquartered in Nashville, Tennessee. The SCC is the administrative headquarters for more than 25,000 AASDA residing in Alabama, northwest Florida, Kentucky, Mississippi, and Tennessee. Smaller numbers of AASDA from other southeastern states, such as Georgia, South Carolina and North Carolina, also participated in these meetings. SCC officials confirmed that not less than 90% of all persons attending were members of churches from states served by SCC.

A convenience sample was taken from over 1,028 AASDA during the campmeeting service. A total of 1,500 Health Risk Appraisal questionnaire instruments were distributed to collect data on various lifestyle categories including: Demographics, Behavioral Risk, Clinic Measures, Vehicular Safety, Preventive Measures, and Personal Factors. Results from the survey showed low-risk behav-

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The homogeneity in dietary practices and low levels of smoking and alcohol consumption have generated numerous studies of SDA.

itors for risk factors such as smoking, alcohol use, high blood pressure and seat-belt use. Responses concerning exercise, physician and clinical visits, however, were not as positive.

PURPOSE

Based on national data, AASDA form a group whose ethnicity suggests increased risk for premature illness and death, but whose lifestyle values and practices would tend to reduce that risk substantially. The identification of many risk-reducing behaviors among this population suggests that the lifestyle practices of AASDA could have benefits for health education and disease prevention interventions for the African-American population as a whole.

The homogeneity in dietary practices and low levels of smoking and alcohol consumption have generated numerous studies of SDA. These studies evaluated the role of diet and lifestyle in the incidence and mortality of a number of chronic diseases. During the past 25 years over 100 studies reported on the health status of SDA in several countries. The majority demonstrated an association between low rates of chronic disease morbidity and mortality (e.g., reduced levels of cardiovascular disease) and the Adventist lifestyle and diet.^{7,8} For example, Lemon, Walden and Dysinger pioneered the first studies on Adventist in 1958.⁹ They reported that deaths among SDA in California were 30% fewer than expected as compared to non-SDA Californians of comparable age. In 1980, Phillips, Kuzma and Garfinkel reported an overall cancer mortality that was one-third less for SDA men and 25% less for SDA women than for non-SDA Californians.¹⁰

To date, most of the data on SDA comes from the study of white population groups. Only a few studies have reported data

specific to AASDA. Despite limited data, however, there is convincing evidence that African-Americans enjoy better health as a direct result of the SDA advocated lifestyle. For example, a study reported in 1989 and conducted in the Midwest by Melby, Goldflies, Hyner and Lyle compared blood pressure in a group of AASDA who followed a vegetarian diet to that of AASDA who were non-vegetarians. Results of this investigation showed that AASDA vegetarians had lower systolic blood pressure, weight, body mass index, waist circumference, and other health risk than did their AASDA nonvegetarian counterparts.¹¹ Another 1989 investigation conducted by Murphy, Blumenthal, Smith and Peay looking at the causes of death among AASDA residing in the southeastern United States showed low cancer-related mortality and an overall decrease in years of life lost to disease for the study population when compared to the general population.¹² These studies indicate that AASDA who adhere to the recommended lifestyle of the denomination may have already met many of the Healthy People 2000 objectives for reducing risk factors for cancer, cardiovascular disease, and other leading causes of death.

The primary purpose of this convenience sample was to initiate an ongoing profile of lifestyle practices from a cross-section of AASDA residing in the southeastern United States. The investigation also sought to assess the health practices of this specific group relative to health values espoused by the SDA church organization as a whole.

Problem Overview

African-Americans make up 12% of the United States population, live in all regions of the country, and are represented in every socioeconomic group. The 11 states with the highest proportion of African-Americans in the population include Mississippi, Louisiana, South Carolina, Georgia, Alabama, Maryland, North Carolina, Virginia, Delaware, Tennessee, and the District of Columbia. However, 80% of all African-Americans reside in 16 states. These states are New York, California, Texas, Michigan, Pennsylvania, Ohio, Illinois, New Jersey, Alabama, Florida, Georgia, North Carolina, South Carolina, Maryland, Virginia, and Louisiana.¹³ Healthy People 2000 reports that over one third of African-Americans live

in poverty, a rate that is twice that of the white population. Over half of African-Americans live in census tracts typified by poverty, poor housing, unemployment, pervasive drug culture, violence, and general stress. Poor nutrition and drug abuse, which appear more common among African-Americans with low income, are a difference in life expectancy between U.S. males (71.8 years) and females (78.6 years), and between U.S. males (64.8 years) and females (78.6 years).¹³⁻¹⁵

Life expectancy for African-Americans has lagged behind that for the white population throughout this century. Leading chronic diseases account for reduced life expectancy. African-Americans are, for the most part, those for the major causes of death, however, African-Americans have higher rates than do whites. Statistics indicate that African-Americans die earlier, routine, and from heart disease.^{15,16}

According to the National Health Survey, the prevalence of hypertension among African-American women (27%) is compared with 27% of U.S. population.

American women (27%) as the rate for the total population.¹⁸ The National Health Examination Survey (NHES) (1980) found that 37% of African-American males and 38% of African-American females had hypertension, with 33% of all U.S. adults having hypertension.

African-American men (27%) had high blood cholesterol levels. This was slightly lower than the total population (29%).

Obesity is quite prevalent among African-American women (43.8%) compared with 30% of U.S. female population. The prevalence of diabetes in African-Americans (12%) is estimated by the National Health Examination Survey that of the total population (12%).^{13,14,17}

Regional differences

in poverty, a rate three times that of the white population. Over half of all African-Americans live in central cities, in areas typified by poverty, poor schools, crowded housing, unemployment, exposure to a pervasive drug culture and periodic street violence, and generally high levels of stress. Poor nutrition, smoking, alcohol and drug abuse, and other risk factors appear more commonly among African-Americans with low income. In 1989, the difference in life expectancy between all U.S. males (71.8 years) and African-American males (64.8 years) was 7.0 years; the difference in life expectancy between all U.S. females (78.6 years) and African-American females (73.5 years) was 5.1 years.¹³⁻¹⁵

Life expectancy for African-Americans lagged behind that for the total population throughout this century. Data on the leading chronic diseases as causes of reduced life expectancy in African-Americans are, for the most part, the same as those for the majority population; however, African-Americans suffer at much higher rates than do their white counterparts. Statistics also demonstrate that African-Americans do not receive enough early, routine, and preventive health care.^{15,16}

According to the 1989 Current Population Survey, the prevalence of smoking among African-American men was 32.9% compared with 27.5% of all men in the U.S. population. The rate for African-American women (23.2%) was the same as the rate for the total U.S. female population.¹⁸ The National Health and Nutrition Examination Survey (NHANES, 1976-1980) found that 37.9% of African-American males and 38.6% of African-American females had hypertension, compared with 33% of all U.S. females. About 24% of African-American male and female adults had high blood cholesterol ($\geq 240 \text{ mg/dL}$). This was slightly lower than the rate for the total population (27%).¹⁴⁻¹⁶

Obesity is quite prevalent among African-American women. The data on obesity in African-American females were 43.8% compared with 27.1% of the total U.S. female population. The prevalence of diabetes in African-Americans, as estimated by the National Health and Nutrition Examination Survey, is 1.6 times that of the total population (19% versus 12%).^{13,14,17}

Regional differences, however, do ex-

Life expectancy for African-Americans lagged behind that for the total population throughout this century.

ist in the United States for cardiovascular disease mortality and associated risk factors among African-Americans. Individuals in the southeastern United States, for example, suffer significantly higher rates of hypertension stroke mortality than do residents of the rest of the country. The states of Alabama, Arkansas, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, and Virginia are known as the "stroke belt" because the age-adjusted rates for stroke are 10 to 45% higher than the national average.¹³

A 1989 study pointed out that the prevalence of hypertension among African-American females was significantly higher in the Southeast (44%) than in all other regions (34%). Although African-American hypertensives in the southeast were as aware of their condition as hypertensives in the rest of the nation, the rate of hypertension control among African-American females in the Southeast was significantly lower than elsewhere.¹⁶ The 1990 National Heart, Lung and Blood Institute Report shows that the high stroke mortality rates in the stroke belt have direct ties to African-American population in the region, 65% higher than that of whites.¹³ All states served by the South Central Conference of SDA are part of the stroke belt. However, a 1991 study by Melby, Goldflies and Hyner examined blood pressure, anthropometric characteristics, dietary intake, and resting pulse rate by level of exercise participation in a group of AASDA and determined that participation in vigorous exercise is favorably related to blood pressure and may attenuate the risk of hypertension in AASDA.²⁵

METHODS

A convenience sample of over 1,000 ($n > 1,000$) respondents was selected from over 3,000 individuals attending the 1991 Annual Campmeeting in Huntsville, Ala-

**Ninety-eight percent
(98.8%) of the
respondents indicated
they did not consume
alcoholic beverages.**

bama. Each year, over 3,000 AASDA attend the annual session sponsored by the South Central Conference of SDA making an excellent setting for the following surveys and other investigations and studies.

Data on lifestyle practices are not systematically reported to the SCC headquarters by its constituent churches; however, mortality information is reported quarterly. A 43-question, self-scoring Health Risk Appraisal questionnaire instrument, developed by the Carter Center of Emory University, was used to collect data from campmeeting attendees.²⁶ Each questionnaire was numerically coded, prior to distribution, both for purposes of confidentiality and for ease in logging and retrieving data. The survey instrument included six sections on health practices:

- Group Demographics (age, sex, race, height and weight, education);
- Behavioral Risk Factors (tobacco use, alcohol consumption, exercise, and nutrition);
- Clinical Measures (diabetes, blood pressure, cholesterol, high density lipoprotein);
- Vehicular Safety (miles traveled, mode of travel, seat belt use, driving while drinking, etc.);
- Preventive Measures (mammogram, pap smear, breast exam, rectal and prostate exams); and
- Personal Factors (health perception, violence, personal loss).

An HRA questionnaire and a No.2 pencil were distributed to individuals 18 years of age and over, and brief verbal instructions were given on how to complete the questionnaire. One thousand and twenty-eight (1,028) HRA questionnaires were collected after approximately 30 minutes. The design of the questionnaire permitted investigators to scan data directly into a computer database, with subsequent

manual review to discard those questionnaires improperly completed. Of the 1,028 questionnaires collected, 86% (n=875) were eligible for scanning and analysis.

FINDING

Demographic data retrieved from the questionnaire were categorized by age, sex, height, weight and body frame, education, and socioeconomic status. Responses on work history and marital status were not requested on the instrument. The ages for all participants ranged from 18 to 80 years, with over 75% of all respondents being between the ages of 18 and 55 years and over 60% of all respondents being female. The predominance of female respondents is consistent with the composition of AASDA nationwide.

In the area of education, 33% of the participants reported having completed some college; 22% indicated that they were college graduates; 81% completed high school; the remaining 27% or so of the respondents had not completed high school (Figure 1).

Behavioral findings on tobacco and alcohol use and exercise patterns were noteworthy in the sample. Twenty-six percent (26%) of the participants reported having smoked tobacco in the past; 73% indicated never having smoked. Of previous smokers, however, only 1% indicated they currently smoke cigarettes, or a pipe, or use snuff (smokeless tobacco). Ninety-eight percent (98.8%) of the respondents indicated they did not consume alcoholic beverages. Responses related to physical exercise and seat belt use were less positive. Forty-six percent of the respondents indicated they participated in physical exercise three or more times per week, with about 26% indicating they exercised one or two times per week, and another 26% indicating they exercised less than one time per week. Risk-factor data collected on motor vehicles showed that 51% of the respondents used seat belts more than 90% of all vehicle time.

Responses to clinical measures in the survey showed that a subsample of 827 persons (92%) of the respondents indicated they had never been told by a physician they had diabetes. A subsample of 932 individuals (82%) indicated having a diastolic blood pressure ≤ 90 .

Responses to questions on cholesterol showed a subsample of 612 persons (59%)

to discard those questionnaires completed. Of the 1,028 collected, 86% (n=875) were used for scanning and analysis.

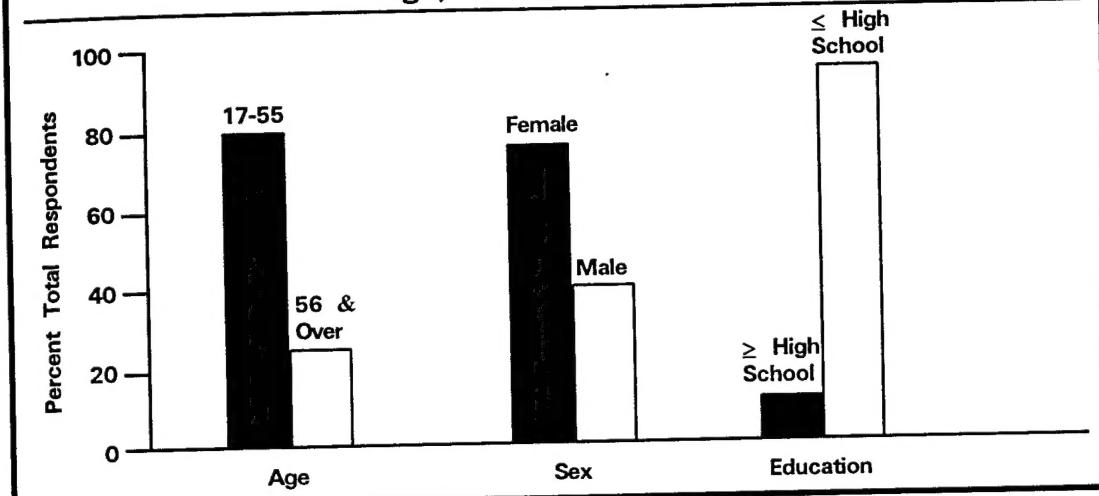
Data retrieved from the were categorized by age, height and body frame, education, work history and marital status. Requests for all participants ranged from 18 to 75 years, with over 75% of all being between the ages of 18 and over 60% of all respondents. The predominance of respondents is consistent with that of AASDA nationwide. Of education, 33% of the reported having completed 22% indicated that they had graduated; 81% completed the remaining 27% or so of those who had not completed high school.

Findings on tobacco and alcohol exercise patterns were similar in the sample. Twenty-six percent of the participants reported smoking tobacco in the past; 73% having smoked. Of previous smokers, only 1% indicated smoke cigarettes, or a puff (smokeless tobacco). Ninety-eight percent (98.8%) of the reported they did not consume beverages. Responses to alcohol exercise and seat belt use were positive. Forty-six percent indicated they participated in exercise three or more times per week, with about 26% indicating one or two times per week. Twenty-six percent indicating they ran one time per week.

Responses on motor vehicle use showed that 51% of the respondents more than 90% of all

clinical measures in the past year. At a subsample of 827 of the respondents indicated never been told by a physician. A subsample of 82% indicated having a cholesterol level <90. Questions on cholesterol levels of 612 persons (59%)

FIGURE 1
African-American Seventh-Day Adventists by Age, Sex and Education



reported having total levels less than 200, 22% indicated levels 200 to 219, 10% indicated levels between 220 to 239, and 8% with levels of 240 or greater. Five hundred forty-five (545) respondents answered the question concerning high density lipoprotein, 91% of these indicating a high density lipoprotein level within the normal range.

Responses to questions concerning cancer prevention and screening measures showed that 63% of all female participants under 40 years of age, reported 3 or more years since their last mammogram, 10% indicated at least 2 years and 26% reported one year or less since their last mammogram. For women over 40 years, 53% reported one year or less since their last mammogram, with 8% reporting 2 years or more, and 39% reporting 3 years or more since their last mammogram. Data gathered regarding pap smear tests showed 59% indicating one year or more since their last pap smear, and 26% indicating 3 or more years since their last pap smear. Responses from men showed that 43% had received rectal or prostate exams one year ago or less, 19% reported 2 years ago or longer, and the remainder reported never having had either exam.

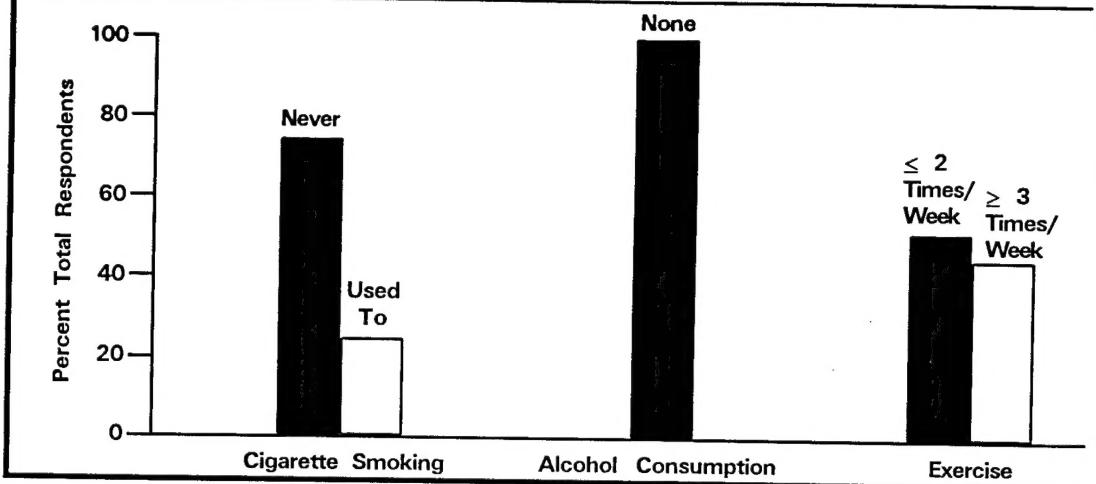
Responses on personal factors related to health showed that 20% of the participants perceived themselves to be in ex-

cellent health, 59% perceived themselves to be in good health, 18% perceived themselves to be in fair condition, and 2% of the respondents perceived themselves to be in poor health. Sixty percent (60%) of all respondents indicated that they were "mostly satisfied" with life. Another 30% reported suffering some form of personal loss or misfortune over the past year, with 89% of the respondents indicated having witnessed or been involved in some form of violence in the past year.

DISCUSSION

Although based on a nonrandom sample, the results of this investigation indicate that tobacco and alcohol use among study participants was extremely low. Because tobacco use in general and cigarette smoking in particular are major risk factors for lung cancer, other cancers, cardiovascular disease, and other major chronic diseases, findings in the investigation that 73% of AASDA have never smoked and that 98% are currently nonsmokers show a significant reduction in a leading behavioral risk for morbidity and mortality as compared to the population at large. Past studies conducted on SDA showed the difference in morbidity and life expectancy between SDA who never smoked and ex-smokers to be quite small suggesting evidence of benefits from quitting.^{9,10}

FIGURE 2
Percent of African-American Seventh-Day Adventists with
Tobacco, Alcohol, and Exercise Use



Exercise patterns for this sample population were slightly better than the national averages for persons of the same ethnic background; however, much more investigation on exercise as a primary risk factor for premature morbidity and mortality in AASDA is needed to more clearly identify health benefits and liabilities. Also, data regarding preventive measures and practices (screening) for AASDA over the age of 40 showed increased risk. Information from Healthy People 2000 about actual use of health services support these findings. For example, 25% of women age 50 and older surveyed in 1987 had received a mammogram and clinical breast exam in the preceding 2 years. A related study found that 42% of all women in the United States had adequately received a blood pressure check, clinical breast examination, pap test, and glaucoma screening. Screening was less adequate among the poor, the less educated, and those living in rural areas, with only 33, 34 and 38%, respectively, screened for all four conditions. African-Americans make fewer annual visits to private physicians than do whites, whereas hospital emergency rooms and clinics are a much more common source of medical care for African-Americans than for whites. Over 20% of African-Americans compared to 13% of whites reportedly have no usual source of

medical care.^{16,22} At the same time, a 1976 study of 27,766 SDA examined diet, medications, use of health services and prevalence of disease in vegetarians and nonvegetarians and concluded that a vegetarian diet may decrease the prevalence of chronic disease, medication use, and health service use, and thus, potentially health care costs.²⁰ A 1989 study supported these results by concluding that SDA participating in the study had higher levels of the tripeptide glutathione, or GSHT, which is proposed to be protective against a number of chronic diseases including cardiovascular and cancer.²³ The consumption of a vegetarian diet was associated with increased plasma GSHT concentration ($p = 0.002$). Thus, the AASDA-prescribed lifestyle can potentially balance the disparity in health care between racial groups.

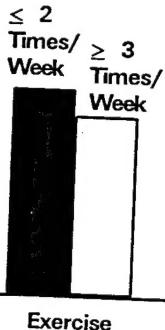
Some have questioned that the reduction in risk for chronic diseases among SDA may be due to selective factors associated with becoming and remaining an Adventist.²⁴ Findings from this convenience sample shows that African-American SDA are a more educated group than the general African-American population. It has been suggested, in studies among white SDA, that the lower risk profile of SDA (e.g., lower CHD risk factors and mortality) may relate to overall higher socioeconomic status rather than life

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style.²¹ Several studies have addressed this issue by comparing Adventist with controls of similar socioeconomic status. Phillips compared Adventist physicians and non-Adventist physicians, and found no difference between the two groups for cancer mortality. However, coronary heart disease mortality was significantly greater among the non-Adventist physicians suggesting that SES cannot account for all the difference.¹⁹ However, Fraser, Dysinger, Best and Chan compared SDA men aged 35 to 55 and their age-matched neighbors, and found no difference in level of education or income, but found significantly lower levels of dietary fat and serum cholesterol and a higher level of physical activity among Adventist men.²⁰

Another potential reason for the better health status of Adventist is that the apparent lifestyle association is strengthened by religious activity and church attendance. A study by Rouse comparing SDA and members of the Church of the Latter-Day Saints (Mormon) found significantly lower levels of cardiovascular risk factors including weight, cholesterol and hypertension among Adventist that were unrelated to degree of religious observance.⁷ Another descriptive study by Lanig used the questionnaire method to investigate health lifestyle patterns of two southern black religious denominations, Baptists and SDA.²² Findings showed the groups to be significantly different only in smoking behavior; SDA were more often nonsmokers. The investigator submitted that the church as a wider support system needs to be utilized by practitioners as a vehicle for client education.

In summary, the data collected in this sample clearly indicate that African-Americans experience remarkable reductions in the levels of chronic-disease risk factors with healthy lifestyle practices. Moreover, the data demonstrate that there is homogeneity in lifestyle habits among AASDA. Because the recommendations of Healthy People 2000 are predicated on the belief that members of the general African-American population can adopt and maintain risk reducing lifestyles, it follows that research in this area should be an important objective. Clearly, the knowledge gained from study of AASDA who make lifestyle changes, with a low incidence of recidivism, can find benefit for the general

African-Americans make fewer annual visits to private physicians than do whites whereas hospital emergency rooms and clinics are a much more common source of medical care for African-Americans than for whites.

African-American community.

The importance and role of lifestyle in maintaining health has been espoused by the SDA Church for over 150 years. Consequently, individuals who join the church (generally adults) develop a heightened awareness of the importance of maintaining health to achieve a better quality of life. Moreover, a 1992 study by Fonnebo studied the standardized mortality ration in Norwegian SDA and concluded that adopting a healthful lifestyle early in life seems to be of decisive importance with regard to mortality, as later lifestyle changes have a smaller effect on death risk.²⁴ This indicates that a further development of this descriptive study could be an evaluation of the significance of age and longevity in healthy lifestyle practices. Along with risk-reducing behavior changes, this results in tremendous benefits in terms of decreased morbidity and mortality from most chronic diseases, and longer life expectancy. Data taken from this study show that health values and practices among AASDA and the effectiveness of these in reducing high-risk lifestyle behaviors warrant more large scale, indepth long-term scientific investigations among the population. ■

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